GENERAL NOTES

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ADDITIONAL NORTH AMERICAN RECORDS OF *EUCOSMOMORPHA ALBERSANA* (TORTRICIDAE: ENARMONIINI)

Additional key words: Michigan, Kentucky, Palaearctic.

The first North American record of the widespread Palaearctic olethreutine *Eucosmomorpha albersana* (Hübner) was of a single male from Midland County, Michigan, collected in 1961 (Miller 1983). Dang and Parker (1990) mentioned Saskatchewan, Canada as a locality for this species but did not include details of the collection other than that the Canadian National Collection is the depository. The purpose of this article is to report collections of a second Michigan specimen and two northern Kentucky specimens. These moths were attracted to a combination of lights, including two 20 watt blacklight tubes and a single 275 watt sunlamp. All three specimens are currently in the author's private collection.

One male (forewing length 5.5 mm) was captured on 13 June 1988, in Otsego County, Michigan. After a token effort to identify the specimen was unsuccessful, it was put away with other undetermined material. On 9 July 1991, a similar but smaller male (forewing length 4.2 mm) was captured in Big Bone Lick State Park, Boone County, Kentucky. These two individuals were obviously conspecific. A subsequent check of their genitalia confirmed that both were *E. albersana*.

A female (forewing length 4.5 mm) was captured in the same Kentucky locality on 4 August 1989. This specimen initially was misidentified as *Dichrorampha leopardana* (Busck), another olethreutine similar in size and color to *E. albersana* and with which it may be confused. All three of the specimens reported here have the intricate forewing pattern noted by Miller (1983).

Moth populations in Big Bone Lick State Park have been well sampled by the author and others. No regular schedule has been followed, but visits to the park to collect moths have occurred approximately monthly during spring and summer for the past 15 years. These activities have produced specimens of *E. albersana* only recently. It appears this species is a newcomer to the local fauna.

In the Palaearctic, larvae of *E. albersana* are leaf rollers on *Lonicera* and *Symphoricarpos*, genera of Caprifoliaceae (Miller 1983, Kuznetsov 1978). Plants in these genera occurring in Big Bone Lick State Park include *L. japonica* Thunb., *L. maackii* Maxim., and *S. orbiculatus* Moench. Although a North American host has not yet been reported, it seems likely that at least one of these plant species is a host locally.

The Palaearctic distribution of *E. albersana* extends from United Kingdom and Scandinavia south to the Mediterranean Sea and east across Europe and Asia as far as the Amur Region of Russia (Miller 1983, Kuznetsov 1978).

The relatively recent discovery and spotty distribution of *E. albersana* on this continent suggest that it is a species only recently introduced, probably on more than one occasion. Collections from three of the past five years suggest a sustained population. There can be little doubt that *E. albersana* is an extant part of the North American fauna.

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NOTES ON THE NATURAL HISTORY OF *ACHLYODES SELVA* (HESPERIIDAE) IN COSTA RICA

Additional key words: life cycle, seasonal abundance, larval behavior.

Skippers of the widely distributed Neotropical genus *Achlyodes* Hubner 1819 exploit various Rutaceae, including cultivated *Citrus* Linnaeus 1735, as caterpillar food plants (Moss 1949, Kendall 1965, Kendall & McGuire 1975, Biezanko et al. 1974, Beutelspacher 1980). In spite of its broad distribution in Central America, Mexico, and South America (Evans 1953), *A. selva* Evans is poorly studied. In this note I report certain aspects of the natural history of *A. selva* in Costa Rica.

Between September 1985 and March 1991, *A. selva* was studied at a *Citrus* bush (approx. 2.0 m tall) located on the campus of the University of Costa Rica in San Pedro Montes de Oca (9°57'N, 84°01'W), San José, San José Province. An initial examination of this bush revealed the presence of several hesperiid larvae concealed in tent shelters, prompting me to rear the caterpillars to the imago and identify the skipper. Subsequent examinations of this bush were conducted to record the abundance of caterpillars, pupae, pupal shells, and tent shelters. The abundance of flush leaves on the bush, easily distinguished from older, dark green leaves by their yellow-green color, also was recorded. At various times small numbers of caterpillars were collected and reared in clear-plastic bags containing cuttings of citrus. Caterpillar behavior in the wild and captivity was noted, especially with regard to shelter construction.

Early stages. Egg not observed. Larva in all instars with strongly dorso-ventrally flattened body profile. Head capsule strongly lobed (heart-shaped) and reddish-brown in all instars, with paired black spots laterally at base. Legs yellowish. Ground color of body bluish-green, with a lemon-yellow collar or integumental fold between body and head capsule. All instars (Fig. 1) with a bright yellow dorso-lateral line running along each side of the entire body length, consisting of closely spaced irregular shaped slashes. Anal clasper and plate with a lateral yellow ridge. The third to the last body segment bears dorsally a median cluster of small yellow dots. No pronounced changes in the color of the larva between earlier and later instars. Very similar to the description of the larva *A. thraso* Hubner, but considerably different from that of *A. busirus* (Cramer) (Moss 1949). From an initial body length of 3–4 mm, the mature larva attains a body length of 45–48 mm in about 25 days. The reddish-brown stout pupa is about 21 mm long and covered with a bluish-white flocculence or bloom (see also Moss 1949), and lasts about two weeks. There is little sexual dimorphism in adult wing size and color (Fig. 1).

Larval behavior. Larvae in all instars construct individual tent shelters in which they perch while not feeding. Larval feeding was not observed in the wild. In late instar larvae, this shelter is often made by anchoring two adjacent large leaves together with silk (Fig. 1). The larva perches on a thin silken webbing on the dorsal surface of the lower leaf and over which is tied a second leaf in a partially overlapped manner (Fig. 1). Shelters